

Risk Factors of Road Traffic Accidents and Emergency Health Services of Rescue 1122 at Rahim Yar Khan

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Abstract

Background: Every year 1.7 million people die in road mishaps around the world. About 70 per cent deaths occur in the developing countries. Emergency Medical Services (EMS) of a country plays their role in minimizing the morbidity and mortality among the victims of accidents and disasters.

Objectives: The objective of this study was to, “Evaluate the risk factors of road traffic accidents and emergency health services of Rescue 1122 at Rahim Yar Khan”.

Study Design and Duration: This was a data based descriptive study for the period of three years from October 2007 to October 2010.

Methodology: This study was conducted at Rescue 1122 center at Rahim Yar Khan. The data was collected regarding the risk factors of road traffic accidents and the nature and number of cases to which the emergency health services were provided by the Rescue 1122.

Results: During the study period there were total 29793 patients to whom emergency medical services (EMS) were provided. Gender wise 77.21% patients were male and 22.79% were female. Majority of the patients 56.96% were belonging to the age group between 20 to 40 years. The major risk factors of accidents were over – speeding, tyre burst, and uneven and jagged roads. Call response time was 6 to 7 minutes, which was longer due to several other factors including road hindrances.

Conclusion: Emergency Medical Services (EMS) can be strengthened by the consolidated collaboration between volunteers and health personnel at all levels. By streamlining the traffic, the call response time and patient access time can be reduced.

Keywords: Rescue 1122, Emergency Medical Services (EMS), and Rahim Yar Khan.

Introduction

Road traffic accidents (RTA) kill more than 1.7 million people a year and injure or disable between 20 and 50 millions more. According to the World Health Organization and World Bank data these injuries are likely to rise dramatically by the year 2020.¹

About 70 per cent deaths occur in the developing countries, out of which 65 per cent involve pedestrians, 35 percent of them children. A third world country like Pakistan is facing the world’s ninth biggest life – threatening problem, traffic accidents. It is estimated that in the country, there was loss of 45,000 lives in 90,000 road accidents during the last nine years causing a loss of approximately Rs. 5 million annually. About 87 per cent accidents are happened due to traffic rules violation and lack of adequate road safety standards in the country. The other important risk factors were the negligence of drivers that were over – speeding, overloading, wrong overtaking and driving under the influence of alcohol or other intoxicants.²

The time interval between an accident and the medical services counts very much in saving the life, minimizing the injury and the complications. World Rescue Organization (WRO) observes the world rescue challenges. In 2010, it focused on developing and

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promoting rescue and life support skills of emergency personnel, which allow them to fill the vacuum until further medical help arrives.³ Emergency Medical Services in Europe evolved during military conflicts from the need to transport a patient from the battle camp to a physician who could provide definitive care.⁴ Over time, individual countries developed systems that best met the needs of that community, based on culture, local welfare state approaches and relevant laws. Nonetheless, availability of health care resources and finance had an impact on the development of such systems.⁵ Regarding Emergency Medical Services (EMS), some systems concentrate interventions on the scene of the emergency, whereas others focus on minimization of transport time and are based on the central role of emergency physicians.⁶

The emergency medical services of developed countries are far advanced as compare to poor, under developed countries. The public sector healthcare system in Pakistan is overwhelmed with numerous problems such as structural fragmentation, resource scarcity, inefficiency and lack of functional specificity, gender insensitivity and inaccessibility. For 66% living in the rural part of the country, poverty, illiteracy and inadequately organized healthcare compound already slowing down progress in health indicators.⁷ The government of Pakistan has been spending 0.6 to 1.19% of its GDP and 5.1 to 11.6% of its development expenditure on health over the last 10 years. Besides, more than 45% of this meager budget would be consumed by curative services, mostly at tertiary hospitals.⁸

Emergency Medical Services (EMS) is pre-hospital services. Pre-hospital medical services include ambulatory services, transportation of the patients to or from places of treatment and acute medical care (also called first aid). Emergencies Health services are required in cases like road accidents, cardiac problems, convulsions and so on. In Pakistan, the role of the private sector, philanthropists and non-government organization like Edhi is very much important and duly acknowledged by the government.⁹ In earlier days, emergency services were being provided only with the means of road transport but now air ambulance services are also available in the country. Although Govt. had established tertiary care health institutes and Trauma Centers, but a major share is also being provided from NGOs and private sector.¹⁰

To combat with emergencies, Govt. of Punjab, had established a separate organization, "Punjab Emergency Service: Rescue 1122". The essential emergency services currently operate via an emergency

services contact system with dedicated telephone number, 1122. To date, few studies had been conducted to examine the strengths and weaknesses of emergency health services (EHS) in Pakistan. This study was designed to evaluate the trauma risk factors in the region and emergency health services of Rescue 1122 at Rahim Yar Khan.

Methodology

This study was conducted at Rescue 1122 center at Rahim Yar Khan. Regarding the risk factors of road traffic accidents, the data was collected about the causes and risk factors of accidents, nature of injuries, vehicle involved, age and sex of the injured. The data was also collected about the number of cases and the nature of injuries to which the emergency health services were provided by the Rescue 1122 at Rahim Yar Khan. The data was analyzed on SPSS version 16.

Results

During the study period 29793 patients were provided emergency health services. There were 11906 patients injured due to road traffic accidents (RTA) and 17887 medical patients were helped out and rescue services were provided to them.

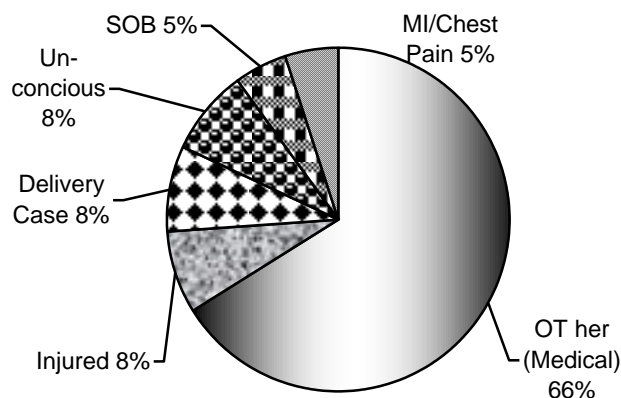


Fig. 1: Reasons of Medical.

Gender wise 77.21% patients were male and 22.79% were female. Less common injuries were found in extreme group of ages, in children less than 10 years of age and in elderly above 50 years of age 10.44% and 11.70% respectively. Majority of the pati-

ents 56.96% were belonging to the age group between 20 to 40 years. Among the medical patients, there were 1256 (7.03%) pregnant ladies who were transported to hospital for delivery. The rest of the patients were 686 (3.93%) of chest pain / myocardial infarction. A good number of unconscious patients 1224 (6.84%) sought after medical care, 9.17% (1642) patients were injured

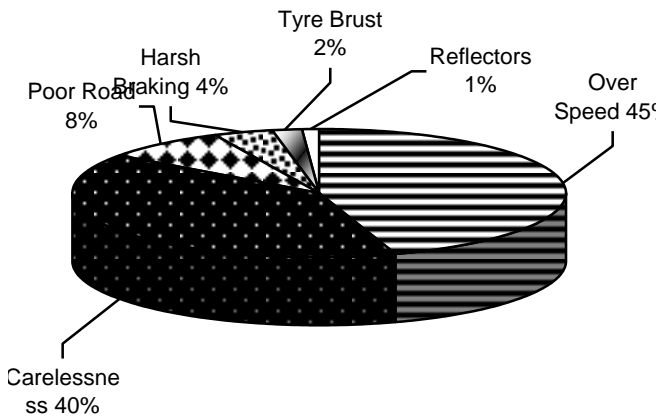


Fig. 2:

Reasons for Medical Emergencies	Num. of Medical Emergencies	Num. of Medical Victims	Percentage
Other (Medical)	9956	12291	68.71
Injured	1230	1642	9.17
Delivery Case	1256	1256	7.03
Unconscious	1224	1224	6.84
SOB	773	788	4.32
MI / Chest Pain	686	686	3.93
Total	15125	17887	100

Reasons for RTA Emergencies	Num. of RTA	Num. of RTA Victims	Percentage
Over Speed	3357	5328	44.75
Carelessness	2965	4653	39.08
Poor Road	577	1055	8.86
Harsh Braking	321	544	4.57
Tyre Burst	131	252	2.12
Reflectors	39	74	0.62
Total	7390	11906	100

other than the RTA causes. The patients needing medical care were at large, 12292 (68.71%).

During the study period there were 11906 patients injured due to RTA. The major jeopardizing factor in 9981 (83.83%) cases was over speeding and carelessness. A good number of persons 1055 (8.86%) were injured due to jagged and uneven roads. There were 796 (6.69%) unfortunate locomotives that met accidents due to tyres burst and harsh braking. About the nature of injuries in RTA, the total proportion of major injuries was 14.55%. In which long bone injuries were 9.17%, head injuries were 3.48% and multiple fractures were 1.89%. The vehicle involved in 76.26% of cases was motorbike and injured were not using helmet or any other safety measures.

Discussion

The worldwide risk factors of road traffic accidents RTA are over speeding, carelessness and poor infrastructure including under privileged condition of the roads and the locomotives. In developing countries, where economic realities force the population to make use of older and less reliable vehicles, the risk of accidents caused by some sort of mechanical failure increases.¹¹

Over the past decades motor vehicles became the primary mode of transportation. The phenomena of urbanization have resulted in more vehicles spending more time on the road at higher speeds. Over speeding is deadly because it reduces the time reacting to a deadly situation such a brake lights in front of them. It also reduces the ability to maneuver around curves or things dropped in the roadway. It had been proven that over speeding is the major contributory factors in accidents.¹² In our study in 83.83% cases of road traffic accidents, this jeopardizing factor was involved. This observation was strengthened by several other studies. In Ghana, it was found that over – speeding constitutes about 50% of road accidents in the country.¹³

Speeding is also associated with other risky behaviors. Speeding drivers are less likely to wear their seat belts, are more likely to be under the influence of drugs or alcohol and have a higher incident of not driving with a valid driver's license.¹⁴ It was found in the study that there were 6.69% unfortunate locomotives that met accidents due to tyres burst and harsh braking.

The reports of accident response units (ARU) also indicate that tyres and brakes were the main contributors to mechanical failures resulting in accidents in the Pretoria region (Gauteng Province).¹⁵

The most frequent vehicle indulged in accidents was Motorbike. It was found in the study that in 76.26% cases motorbike was used. Motorbikes are most frequently used due to their high flexibility and easy road adjustment. These are also sometimes used for luxury and enjoyment. The hiking prices of petroleum in the country had also forced the Pakistani population to make its use frequently, because these vehicles have proven as fuel economical. Throughout the world, it has been found that Powered two wheelers (PTWs) riders are one of the most vulnerable groups of road users.¹⁶ Poor road design and maintenance contribute to motorcycle crashes, injuries, and fatalities. Illegal and non-reflected barriers can also pose hazards to motorcyclists.¹⁷

The other major cause of road traffic accidents (RTA) is the condition of our roads, bad roads will lead to higher driving accident, and usually such accident occurs at night when roads become invisible. In our study a large number of persons (8.86%) were injured due to jagged and uneven roads. It is important for the relevant government institutions to maintain these roads more often. This factor had been observed in several other studies.¹⁸ The call response time in our study was 6 to 7 minutes. While in another study the overall median and 90th percentile (95% confidence interval) patient access time intervals were 1.61 (1.27, 1.91) and 3.47 (3.08, 4.05) minutes, respectively. The median interval was 2.73 (2.22, 3.03) minutes among calls from patients located three or more stories above ground compared with 1.25 (1.07, 1.55) minutes among those at lower levels. The patient access time interval represented 23.5% of the total EMS response time interval among calls originating less than three floors above or below ground and 32.2% of those located three or more stories above ground.¹⁹

Conclusion

Pakistan is an agricultural country. It had been observed that in the periphery of the country like Rahim Yar Khan in different crop seasons, the over loaded trolleys with crops like cotton, sugar cane, wheat straw and other material made the roads situation worst. Among the other factors, which needs a collaborative efforts by road traffic engineering, law enforcement

authorities, and public health persons for health education about adopting the safe, driving measures. The law should be implemented with great zeal and spirit by discouraging the ill trained, underage and uneducated drivers having no idea about traffic rules and regulations. The outlived and jam – packed vehicles should not be allowed coming on the roads.

The services of Rescue 1122 are highly appreciable and excellent. A country like Pakistan who is the victim of terrorism needs more highly skilled and well – equipped emergency medical services to cope with the growing number of emergencies. Observing the traffic rules can reduce the call response and patient access time.

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